



# Project Fact Sheet



## *Indian Springs School Geothermal Heating System*

### **GOAL**

- To provide direct-use space and water heating to Indian Springs School in Big Bend, Siskiyou County, California using geothermal resources.

### **PROJECT DESCRIPTION**

The direct use geothermal system provides space heating and hot water for 3 classrooms, a gymnasium, the kitchen, and a 70,000 gallon swimming pool.

The single well on school district property is 860 feet deep and includes a 15 horsepower pump with a 25 horsepower motor. The geothermal fluid is 123 degrees F at the source and flows through a 450-foot insulated PVC pipe to the buildings and pool. The exceptionally clean fluids are discharged into a nearby creek.

From the initial installation of the system, there was a problem with air getting into the copper line and causing corrosion. The problem was temporarily addressed by the installation of a back-pressure valve. In 1993, the system was modified to include three heat exchangers: one for the buildings, another for the pool, and a third for the showers. The school paid for this conversion, which permanently corrected the air leakage problem.

With the heat exchangers, the flow rate is 75-80 GPM in the winter, and 20-30 GPM in the summer when only the pool is heated. The flow rate was 30-40% less before the heat exchangers were installed.

The system was expanded in 2002 to provide heat for a new greenhouse at the school. A Healthy Start Grant funded construction and system installation.

### **BENEFITS TO CALIFORNIA**

Prior to the installation of the geothermal district-use system, the school was primarily heated with electricity. As a result of the installation of the geothermal system, the school's electricity bill was reduced by about 90% from 1986 (pre-system) costs.

### **FUNDING AMOUNT**

The school owns and operates the system, which has functioned continuously since its installation in 1986.

The California Energy Commission provided grant co-funding for construction of the geothermal system.

Awards to Indian Springs School District	\$217,085
Match funds, Indian Springs School District	<u>58,420</u>
<b>Total</b>	<b>\$275,505</b>

## **PROJECT STATUS**

Completed.

## **FOR MORE INFORMATION**

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